



Testimony before the House Energy and Commerce Committee  
Subcommittee on Oversight and Investigations

Growing the Domestic Energy Sector Supply Chain and Manufacturing Base: Are Federal Efforts  
Working?

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Mr. Chairman, thank you for the opportunity to testify at this hearing.

My name is Kenny Stein, I am the Vice President for Policy for the Institute for Energy Research, a free-market organization that conducts research and analysis on the function, operation, and regulation of energy markets.

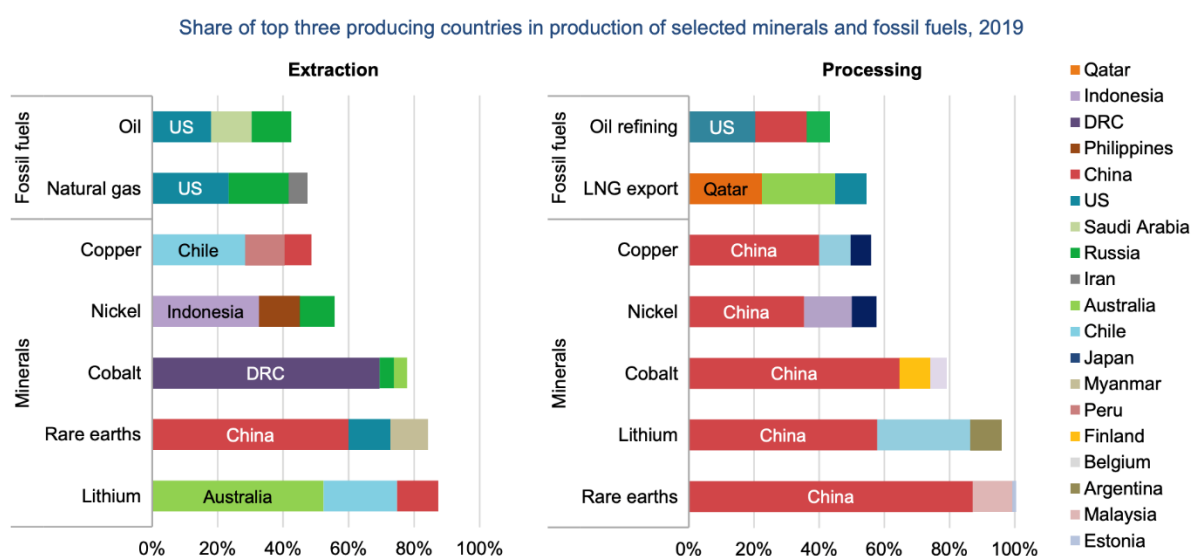
Vast subsidies for politically-favored industries are rarely a wise use of taxpayer funds. Politicians are very bad at identifying the most productive technologies or foreseeing future economic trends. This means industrial policy is distortive and often leads to inefficient and wasteful resource allocation as industries chase government money and mandates rather than catering to customers or working to innovate for the future. The copious suite of subsidies crammed into the misnamed Inflation Reduction Act (IRA), as well as the spending in the Infrastructure and Investment and Jobs Act (IIJA) mean to support green energy, share those usual deficiencies. However, the IRA particularly goes further than merely misguided industrial policy because the industries singled out for the most generous subsidy – namely wind (electricity generation), solar (electricity generation), and batteries (both for electricity storage and electric vehicles) – are not domestic industries. The inputs and components that will build the subsidized green energy system envisioned by the IRA and the IIJA will come from foreign countries, especially China, which thoroughly dominates both the solar and batteries industries, and is a major part of the wind industry. The IRA thus discards even the usual justifications for industrial policy such as supporting domestic industry or security. This green industrial policy actually seeks to destroy domestic energy and replace it with foreign energy. The policy set forward in the IRA and the IIJA will tax our children to pay China for green energy to replace the oil, natural gas and coal that we currently produce here in America.

**Green Energy Is Made In China**

The problem with wind, solar and batteries is that while they don't require ongoing fuel like other electricity sources, they require an enormous amount of materials to build in the first place. For example, a typical electric car requires six times the mineral inputs of a conventional car mainly due to the battery module, and an onshore wind plant requires nine times more mineral resources than a gas-fired plant. Since 2010 the average amount of minerals needed for a new unit of power generation capacity has increased by 50% as the share of renewables in new investment has risen.<sup>1</sup>

These minerals have to come from somewhere, dug up out of the ground and processed into a usable form. Unlike oil and natural gas, which are found and produced around the world, the production of the main green minerals is quite concentrated. In 2019 for example, the top three extractors of copper and nickel produced more than half of global production, and the top three extractors of cobalt, rare earths, and lithium produced 75-85% of global production. In contrast, the top three producers of oil and natural gas (both of which include the United States) produce less than 50% of global production. But this mining concentration pales in comparison to the concentration in processing, where China dominates.

### Production of many energy transition minerals today is more geographically concentrated than that of oil or natural gas



Notes: LNG = liquefied natural gas; US = United States. The values for copper processing are for refining operations.

Source: IEA World Energy Outlook Special Report<sup>2</sup>

China now processes a majority of the world's nickel, cobalt, lithium, graphite, manganese and rare earths, which are key inputs for wind turbines, solar panels, and batteries. For several of

<sup>1</sup> International Energy Agency, *The Role of Critical Minerals in Clean Energy Transitions*, May 2021, <https://www.iea.org/reports/the-role-of-critical-minerals-in-clean-energy-transitions>

<sup>2</sup> International Energy Agency, *The Role of Critical Minerals in Clean Energy Transitions*, May 2021, <https://www.iea.org/reports/the-role-of-critical-minerals-in-clean-energy-transitions>

those categories, such as graphite, manganese and rare earths, China accounts for 80-100% of global production. China's dominance goes beyond the processing itself; China also controls the manufacturing and production of many green energy products: around 80% of lithium-ion battery cell production; 80-90% of anode and cathode production; between 60-80% of polysilicon, wafers, crystalline silicon cells, and solar modules.

What all this means is that green energy is truly made in China. Thus, the vast spending from IRA subsidies will be spent on Chinese products and inputs and enrich Chinese companies. Now the IRA did include some incentives to try to produce many of these inputs domestically. But the process of opening a new mine stretches for many years if not decades. And that is assuming all goes well with the permitting and approval process, which has not been the case under the Biden administration, with mines such as Twin Metals and Polymet in Minnesota, Resolution and Rosemont in Arizona, and Pebble and the Ambler Mining District in Alaska, just to name a few prominent examples, all facing obstacles or outright disapproval. The processing of these minerals is also a very dirty and energy-intensive business, which is part of why so much of it is done in China where what minimal environmental standards as may exist are easily ignored if you have the right connections and cheap coal-powered electricity is on offer. Trying to build these processing facilities in the United States will inevitably be stymied by the National Environmental Policy Act or other environmental regulations, to say nothing of the lawsuits from every green organization under the sun (organizations which ironically also support increased use of green energy). Some final assembly of imported Chinese components will probably happen in the US in foreign-owned facilities in order to game IRA subsidy eligibility, but that façade cannot hide what's really happening. Which is all a long way of saying that green energy will not be made in the USA anytime soon. To subsidize green energy today is to subsidize China.

## **What About National Security**

For decades the primary goal of American energy policy has been security of supply, to ensure that the United States can rely on itself for energy supplies in the event of conflict or crisis. Just in the last 5 years we have just about achieved that energy security that was so elusive, the US is a net exporter of oil, natural gas, coal, and refined products, and what oil we still import mostly comes from Canada and Mexico.<sup>3</sup> We are so secure that we were able to aggressively sanction the oil industries of two major producers (Iran and Venezuela) without worrying about domestic energy impacts. After Russia invaded Ukraine, US natural gas has been able to replace Russian supplies to our friends and allies in Europe. The energy posture of the United States is the envy of the world, even now with a hostile administration trying to shut down domestic production of oil and gas. Yet the avowed goal of the IRA is to throw away that hard earned security and replace our entire energy system with inferior green alternatives sourced from overseas.

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<sup>3</sup> U.S. Energy Information Administration <https://www.eia.gov/tools/faqs/faq.php?id=727&t=6>

To put this in context, at the peak in 2001 the United States relied on the Middle East for 23% of our oil needs.<sup>4</sup> That was viewed as a national security crisis, that we were running out of oil and reliant on countries that hated us. The US currently imports 74% of our rare earth needs from China, with many other major green mineral needs over 50%.<sup>5</sup> The entire solar and battery supply chains are controlled virtually end to end by China. There is no prospect of that changing in the near future, whatever the wishes of politicians, and even longer term there are few past examples of successful industrial policy. Yet still we are intentionally seeking to increase reliance on these Chinese energy sources.

The security issue goes beyond merely China's control of the inputs to a green energy system. An electric grid more reliant on intermittent generation sources is much more fragile and expensive. Intermittent energy frequently goes to zero, requiring expensive backup capacity and vast spending on transmission and duplication to even attempt to support the electricity demands of a modern economy. The much-touted spending on transmission included in the IIJA is tens of billions of dollars that are not needed for the improving the grid itself, that transmission is purely an attempt to make unreliable and expensive wind and solar a little less unreliable and expensive. Wind and solar generation sources also do not last very long, usually needing to be replaced within 20 years (in contrast to coal, gas, nuclear or hydro power which all measure their service life in multiples of decades). This weaker, more expensive grid is more susceptible to failures, be they weather events, human error, or deliberate damage, because there is not a strong reserve of stable, dispatchable generation.

### **Subsidies Deliberately Weaken Both Our Electric Grid And Our National Security**

The IRA energy subsidies are pushing the US towards more expensive and less reliable electricity, while also discarding America's energy security in favor of dependence on China. And for all the money appropriated in the IIJA for transmission and electric vehicle charging, the energy sources that spending is meant to support will not be being made in the USA any time soon, if ever. Green energy is made in China and the more that the US comes to rely on these green energy sources, the more we are relying on China. It might seem incredible to the average voter to believe that we would be consciously replacing reliable domestic energy with unreliable, expensive and foreign-controlled energy, but that is the net effect of the energy subsidies in the IRA. It is a scandal that we would so deliberately harm ourselves to the benefit of our greatest geopolitical adversary and a course correction is desperately needed.

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<sup>4</sup> Oil Price, How the United States has Reduced Its Dependence on Middle East Oil, January 15, 2020, <https://oilprice.com/Energy/Energy-General/How-The-US-Has-Reduced-Its-Dependence-On-Middle-East-Oil.html>

<sup>5</sup> U.S. Geological Survey Mineral Commodity Summary 2023 <https://pubs.usgs.gov/periodicals/mcs2023/mcs2023.pdf>